

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/112706 A2

(51) International Patent Classification⁷: **A61K**

(74) Agent: DELUCA, Mark; Cozen O'Connor, 1900 Market Street, Philadelphia, PA 19103 (US).

(21) International Application Number:
PCT/US2004/019028

(22) International Filing Date: 14 June 2004 (14.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/478,187 13 June 2003 (13.06.2003) US
60/478,250 13 June 2003 (13.06.2003) US
60/478,230 13 June 2003 (13.06.2003) US

(71) Applicant (for all designated States except US): THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA [US/US]; 3160 Chestnut Street, Suite 200, Philadelphia, PA 19104-6283 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WEINER, David, B. [US/US]; 717 Beacom Lane, Merion, PA 19066 (US). MUTHUMANI, Karuppiiah [US/US]; 52 Ivy Lane, Cherry Hill, NJ 08002 (US). KUTZLER, Michele [US/US]; 188 Penn Avenue, Souderton, PA 18964 (US). CHOO, Andrew, K. [US/US]; 796 Dunleazy Place, Lansdale, PA 19446 (US). CHATTERGOON, Michael, A. [US/US]; 4300 Spruce Street, Apartment C-203, Philadelphia, PA 19104 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VACCINES, IMMUNOTHERAPEUTICS AND METHODS FOR USING THE SAME

(57) Abstract: Compositions, recombinant vaccines and live attenuated pathogens comprising one or more isolated nucleic acid molecules that encode an immunogen in combination with an isolated nucleic acid molecule that encodes an immunomodulator protein selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAPI, TAP2 and functional fragments thereof are disclosed. Methods of inducing an immune response in an individual against an immunogen, using such compositions are disclosed.

WO 2004/112706 A2

BEST AVAILABLE COPY